

Chapter 2: Existing Conditions

2.1 Study Area and Overview

The Greensboro Metropolitan area contains the third-largest city in North Carolina, Greensboro, and the municipalities of Stokesdale, Oak Ridge, Summerfield, Pleasant Garden, Sedalia, and unincorporated Guilford County areas. These communities continue to grow at a rapid pace, leading to a large metropolitan area. Growth offers positive opportunities, but also creates a range of challenges for the area, including the development of a transportation system that will meet community and regional needs. At the same time, community priorities regarding transportation and its relationship to broader community objectives have evolved in recent years, as reflected in a range of community planning efforts and infrastructure projects.

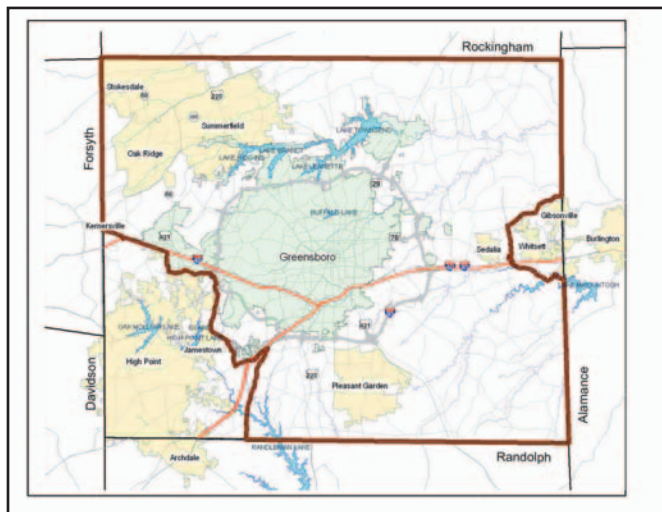


Figure 2(a). This map shows the Study Area, outlined in maroon, for this planning effort.

A complete evaluation of existing conditions serves as the basis for developing a system of greenways, pedestrian and bicycle facilities, and the policies that should guide the metropolitan area as it continues to grow.

It is important to consider a number of factors that impact the overall pedestrian and bicycling environment. This chapter looks at history, previous plans, demographic, land use and transportation characteristics, trip attractors, existing pedestrian and bicycling facilities, and ongoing greenway development efforts to lay the groundwork for the current planning effort.

2.2 Historical Perspective

The History of Walkability and Bikeability in the Greensboro area

Walking was the primary mode of transportation in Greensboro's earliest years, and Greensboro developed as a walking city through much of the nineteenth century. This pattern continued as the City grew and became a significant rail junction and industrial town. The implementation of streetcar lines in the late nineteenth and early twentieth centuries spread the city limits by enabling increased trip distances and the dispersion of housing and employment. Because it was public transportation oriented, this growth occurred in a less compact but still highly walkable community pattern.

Development patterns began to change by the 1920's as automobile use dramatically increased. The dispersion of housing and employment accelerated and development density declined. Though the 1930's and 1940's saw high levels of public transportation use through the great depression and then the Second World War, automobile use continued to spread. By the late 1940's the community was heading towards a focus on automotive mobility with progressively less emphasis on the provision of walking-related infrastructure.

By the late 1990's it became evident that walkability



needed to become a community priority. In work leading up to the 2000 Transportation Bond package, the City heard clearly from the community that infrastructure enhancements to support walkability were a priority. Under the direction of the City Council, the 2000 Transportation Bond package was developed to incorporate sidewalks in roadway system enhancements, as well as to support the retrofitting of existing roadways with sidewalks and the continuing development of a greenway trail system. The approval by Greensboro voters of the 2000 Transportation Bond thus represents a new commitment to create a more walkable Greensboro.

The unincorporated county and area towns have not embarked on pedestrianization initiatives for the most part. One goal of this plan is to further the discussion of pedestrian facility needs in these areas.

Bicycling has over one hundred years of history in the Greensboro area. However, prior to the development of this plan, the main focus for accommodating bicycles was with the development of a signed bicycle route system and the greenway system. This plan is the first substantial effort to systematically develop a network of on-road bicycle facility improvements.

The Historical Development of Greenways in the Area

In 1997, the Greensboro Parks and Recreation Department recognized the need to consolidate the existing system of trails and greenways that had been established to date and coordinate the future of trails and greenways by establishing a Trails and Greenways Division within the department. Prior to 1997, trails and greenways were built by citizens, park staff and other City employees without a written framework for future planning or a strategy to promote the benefits of trails and greenways.

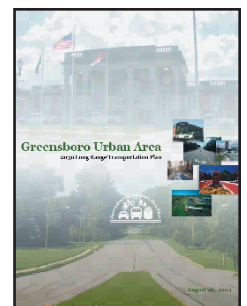
The Trails and Greenways Division of Greensboro Parks and Recreation has made great progress in coordinating the efforts of achieving a comprehensive trail and greenway network and its ongoing development. Over the last nine years, the Trails and Greenways Division has partnered with other organizations such as Greensboro Department of Transportation, Guilford County Community and Economic Development Department, the Piedmont Land Conservancy and others to strengthen the relationship of trails and greenways within the community. In addition to partnerships, the Trails and Greenways Division has been awarded grant and bond funding totaling over three million dollars to expand and promote the trails and greenways system. The Trails and Greenways Division recognizes that the benefits of a comprehensive master plan are vital to the development of a trail and greenway system that will meet the needs of a growing community.

2.3 Community Plans

Special consideration was given to the current community plans, policies, and documents to better integrate the Bicycle, Pedestrian, and Greenways Plan into the fabric of area planning efforts, and to incorporate the insights, visions, and findings of other plans as appropriate. Some of the more significant plans and documents are described below.

Greensboro Urban Area 2030 Long Range Transportation Plan

The Long Range Transportation Plan (LRTP) is a federally required long-term planning document detailing the transportation improvements and policies to be implemented in the area. The LRTP is revised every four years at a minimum, and must address no less than 20 years into the future





for the duration of its four-year lifespan. The 2030 plan was a major overhaul of previous plans, involving extensive technical analysis, fourteen public meetings, small group meetings, and a statistically valid random survey of area residents. The area considered three different future land-use and transportation scenarios for the area. In brief, the plan concluded that a balanced transportation investment scenario is the best approach. This includes a continuing focus on an efficient, well-maintained roadway system, but also a major focus on transportation choices in the form of a well-connected system of pedestrian and bicycle facilities and enhanced public transportation services. The plan made specific recommendations for bicycling and pedestrian facilities including:

Urban

- Aggressive program of retrofit sidewalk installation on major streets
- Improved pedestrian crossings at busy intersections
- Enhanced trail system
- Detailed bicycle study and plan needed

Rural

- Sidewalks and/or trails should be installed where appropriate
- Key pedestrian crossings should be evaluated for safety enhancements
- Detailed bicycle study and plan needed to assess needs and recommend improvements.

In addition to its general recommendations, the plan concluded that a more detailed evaluation and prioritization of future bicycle and pedestrian facilities was needed, and was thus the primary catalyst to the development of the pedestrian and on-street bicycling elements of this plan.

City of Greensboro Walkability Policy

On March 19, 2002 the Greensboro City Council voted

unanimously to establish the “Greensboro Walkability Policy.” The Policy reads as follows:

“The Greensboro City Council hereby establishes the goal of creating a more walkable Greensboro. This goal will be attained through the following actions:

- An ongoing City sidewalk construction program targeted to community and transportation system needs, including improving safety and access to needed services and destinations.
- An ongoing City effort to respond to pedestrian safety, mobility, and access issues through the use of other warranted pedestrian facility improvements, education, and other strategies.
- Ordinance requirements for development and redevelopment that require sidewalk construction to meet pedestrian safety and access needs and further the City’s sidewalk connectivity goals.”

The policy calls for a sustained, long term effort to achieve the goal of improved walkability throughout the community. The policy helped to connect the City’s sidewalk construction program that was in the early stages of implementation at the time the policy was adopted, to the directive to develop proposed changes to the sidewalk elements of the development ordinance, and to a broader range of initiatives as well. The policy is expected to continue to guide Greensboro’s efforts in the years ahead. Chapter 5 describes how this policy should be strengthened and incorporated into the Greensboro Uniform Development Ordinance in the future.

Connections 2025 Comprehensive Plan

The Greensboro Connections 2025 Comprehensive Plan marked a historic shift for the City of Greensboro and its growth area, in that it was the first comprehensive



community plan ever, and the first forward-looking land use plan since the 1960's. Adopted in 2003, the Plan calls for a "functional, well integrated transportation system that provides connections and choices for citizens to move about Greensboro and the Triad." The Plan notes the importance of the following three strategies: to create a balance among different modes of travel, to integrate development patterns and transportation networks, and to ensure equitable distribution of transportation facilities and choices. While the 2025 Comprehensive Plan applies to all modes of transportation in the Greensboro area, guidelines are specified to ensure that bicycle and pedestrian interests are accurately represented. In fact, the Walkability Policy was reflected and reinforced. Other guidelines include:

- Develop comprehensive bicycle and pedestrian networks
- Promote walking and bicycling by supporting and applying policies that include prioritization of improvements and modifications of development standards
- Coordinate bicycle and pedestrian improvements with roadway and transit plans to create a comprehensive network
- Bicycle and pedestrian facilities should be considered early in the planning process of all roadway, transit and rail projects
- Existing bicycle and pedestrian facilities should be preserved at all cost, when there is a potential for disruption with the introduction of any new transit route
- Continue to expand the greenway network via off-street bicycle and pedestrian paths
- Develop a "missing links" map to illustrate gaps and deficiencies in the bicycle and trail networks
- Appropriate adequate funding for construction and maintenance of all bicycle facilities, trails and sidewalks.

Another key component of this Plan is the focus on open space. It is recommended that the City create dedicated funding sources for long-term acquisition of greenways and parks, expand incentives for voluntary dedications and easements, continue partnerships with local land trusts and community foundations, and encourage dedication and/or acquisition of public easements within stream corridors that could become part of the greenway system. It re-emphasizes the 2001 Open Space and Drainageway Map that allows the City to require dedication of greenways along these drainageways in new subdivision developments. It also recommends that a regulatory approach be considered as well, requiring open space dedication. This regulatory approach would establish minimum set-aside requirements for subdivisions and provide increased density incentives. It would also require dedication of land along designated streams and "missing links" in the greenway system during development.

Most recently, the Parks, Open Space, and Greenways Committee (initiated by recommendations from the Connections 2025 Comprehensive Plan) developed further recommendations to expand the network of parks and greenways in Greensboro. This committee was formed as a stakeholders group comprised of representatives from the development, alternative transportation, recreation, and environmental communities. They have identified potential corridors to be preserved, established a funding strategy, identified regulatory measures to promote open space dedications, and identified incentives for developers to promote open space dedications above and beyond the minimum regulatory requirements. As of August 2006, the recommendations made by the Parks, Open Space and Greenways Committee are pending, as incentives are being considered and addressed holistically throughout the Comprehensive Plan. The list of incentives for consideration is very detailed with



the hope that they will help enhance and expand upon Greensboro's natural resources while creating more flexibility in developing desirable neighborhoods.



Greensboro Pedestrian Plan, 1974

The Greensboro Pedestrian Plan of 1974 was primarily developed to address pedestrian safety issues that were rapidly increasing due to expansion and an increased role of the automobile in the greater urban area. The plan identifies many pedestrian access and safety problems that the City of Greensboro still faces today. The central business district and outlying subdivisions contained the most extensive networks of existing sidewalks, but lacked adequate network continuity. The plan continues by delving quite heavily into research data, breaking down pedestrian accidents by a vast range of variables, ranging from age to proximity to the victim's home.

The 1974 plan outlines numerous suggestions for increasing pedestrian safety. Most of the solutions pertain to providing a more adequate infrastructure in the form of expanded sidewalk systems, crossing signals, crossing guards near schools and marked crossings to allow safer pedestrian travel. Special emphasis was placed on ensuring adequate facilities in and around the city's three college campuses. Safe and sufficient access to community facilities was highlighted as a major concern. The plan also makes mention of a pedestrian safety education program and suggests methods for increasing public awareness of pedestrians.

Greensboro Parks and Recreation Master Plan Update, 2005

The Parks and Recreation Master Plan guides the Parks and Recreation Department in its efforts to acquire land, develop park facilities, and expand and refine its various programs. The plan is consistent with Connections 2025, and provides a more detailed look at the parks and trail aspects of community development. Future Master Plan Updates will reflect and endorse the findings of the trails plan.

Trails and greenways are consistently prioritized in the top group of programs, activities, and facilities considered in the master plan. Survey results show that city trails and greenways were highly desired and consistently prioritized in the top group of programs, activities, and facilities that citizens wanted to see added and/or improved. Because of the convincing survey results, this Plan suggests that outside funding sources should continue to be aggressively pursued and improvements on existing trails should occur.

Guilford County Open Space Report, 2000

This report profiles both the loss of open space across the County and opportunities for open space preservation and acquisition. Recommendations include a long-term open space preservation and acquisition program in recognition of the many uses, functions, and benefits of open space. A key strategy is the preservation of "bubbles" of open space connected by corridors of streams, greenways, and easements. Pilot greenway projects include connecting the Downtown towards the northeast and NC A&T, Keeley Park, Northeast Park, Reedy Fork Ranch, and the Haw River.

Guilford County Area Plans & Town Land Use Plans

Guilford County is currently developing a Comprehensive Plan, but community-based area plans are expected to remain the cornerstone for future

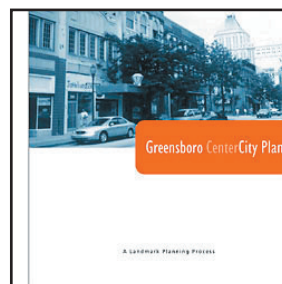


land-use and policy decisions. MPO staff are involved in these planning efforts, and county staff are involved in MPO efforts. These plans generally note the future importance of bicycle, pedestrian and trail facilities. The bicycle, pedestrian, and greenways plan has been developed in consideration with these plans, and is expected to provide support to future plan updates.

The Towns of Summerfield, Oak Ridge, and Stokesdale have adopted town land use plans. Recommended pedestrian and bicycling improvements in these areas have been made in consideration of the provisions and recommendations of these plans. The Town of Pleasant Garden is currently working to develop a community land use plan, and Sedalia may follow suit in the future. Future planning efforts will be coordinated with these municipalities. In the mean time, the county area plans provide some planning support to these areas.

Greensboro Center City Plan, 2002

The Greensboro Center City Plan recommends establishing the downtown area as a vibrant central core, through a series of “catalyst projects.” Developed by Action Greensboro, the plan recognized that as the heart of the community, the downtown is the focus of business, recreation and cultural activities in the area. The plan was pragmatic in recognizing the need for coordinated public and private action. Creating an accessible, pedestrian-friendly environment is a key recommendation. Specific recommendations include a spacious, aesthetically pleasing sidewalk network with improved street crossings, traffic calming strategies,, lighting enhancements, and installation of bicycle racks. Implementation progress through private efforts has been substantial, including development of the baseball stadium, the center city park, and



hundreds of new residential units downtown. Public efforts have also been substantial, with coordinated street resurfacings, wheelchair ramp retrofits, one-way to two-way street conversions, on-street parking additions, and streetscape projects. These efforts have also included the development of draft downtown street and sidewalk standards.

Mobility Greensboro Public Transportation Plan, June 2004

The Mobility Greensboro Public Transportation Plan recommends service, marketing and other improvements for the Greensboro Transit Authority (GTA) bus system over the next 10 to 15 years. The goal of this plan is “to double transit ridership in the next five years from two million in 2002 to over four million in 2008.” Enhanced service quality, reduced headways, new routes, and a focus on improved passenger amenities are key strategies to meeting this goal. Another key strategy is the use of infrastructure improvements to enhance access to public transportation. The sidewalk construction program is focused in part on improving access to bus stops, housing, and destinations. GTA has improved bicycle accommodations on the transit system by providing racks on its fleet of buses. Future initiatives will likely include bicycle parking at selected transit stops and a continuing coordination of sidewalk and bus stop pad and shelter construction.



Greensboro Urban Area MPO Metropolitan Transportation Improvement Program (MTIP) & North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP)
The TIP and STIP list the roadway, public transportation, and bicycle and pedestrian projects in the Greensboro area that are expected to be implemented over the



next seven years with the assistance of federal and state transportation funds. These projects are in many cases key opportunities to improve conditions for walking and cycling in the area. The roadway projects in particular are long range strategic opportunities. For example, the new bridges and interchanges created by the Urban Loop project will have an expected life of 30 to 50 years, and decisions in the short term will affect how well these facilities meet the needs of pedestrians and bicyclists for years to come.

City Data Book 2003, Second Edition

The City Data Book, created by the City of Greensboro, qualitatively and quantitatively describes existing conditions in Greensboro. Each chapter highlights a specific theme including demographics, the economy, zoning and land use, development patterns, the natural environment, transportation, schools, parks and recreation, and many more. It also summarizes key trends and indicators in the Greensboro area. It was used as a guide for developing this existing conditions chapter.

2.4 Demographic and Socioeconomic Characteristics

Significant growth has occurred in the Greensboro area over the last 15 years, and growth over the next 30 years is expected to be substantial. Based on the 2000 Census, Greensboro's population has grown by 21.7% since 1990. Guilford County's population growth follows very closely at 21.2%. The annual average employment growth rate between 1990 and 2000 was 3.2% for the entire county.¹

Current socioeconomic projections for the Greensboro Urban Area estimate an increase in total population from 331,759 to 533,594 between 2002 and 2035, and an increase in total employment between 200,044 and 375,438 over the same timeframe. Peripheral development continues at a rapid pace, but infill

development, including downtown redevelopment, is a positive countervailing trend. Substantial growth in exurban and rural areas will continue to pose challenges in the years ahead. Clearly this growth increases the challenges and the needs for the improvements recommended in this plan. Population density can be seen in Map 2.1 (Population Density).

Geographic trends in race, income and employment can also be found across the metropolitan area. The highest minority populations occur in eastern Greensboro. According to the 2000 Census, the largest unemployment rates and lowest median family incomes were also found in East Greensboro (See Map 2.2 - Median Family Income). These socioeconomic characteristics are important to consider because people living in households with lower incomes are generally more likely than other groups to walk, bicycle, and use public transportation to access activities. The MPO should ensure that people who may rely more on non-motorized transportation are provided with safe and convenient opportunities for walking and bicycling. Currently there are more greenway facilities in the northern, higher-income areas, while the east and southeast portions of the City are generally underserved.

2.5 Land Use Characteristics

Land use patterns and characteristics are a major influence on pedestrian and bicycle transportation in the Greensboro area. One reason for this is that people are most likely to use non-motorized modes for relatively short trips. According to the National Personal Transportation Survey, more than half of all pedestrian trips are one-half mile or less, and more than half of all bicycle trips are one mile or less.² Therefore, proximity matters in choices of whether to walk or bicycle between residences, school, work, shopping, dining, recreation, etc.: areas with higher development densities and a greater mix of land uses



GREENSBORO URBAN AREA

COMPREHENSIVE BICYCLE, PEDESTRIAN, AND GREENWAY PLAN

MAP 2.1

POPULATION DENSITY

Legend

Population Density

0 - 1,000

1,000 - 5,000

5,000 - 10,000

10,000 - 20,000

20,000 - 50,000

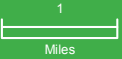
Interstates

Urban Loop

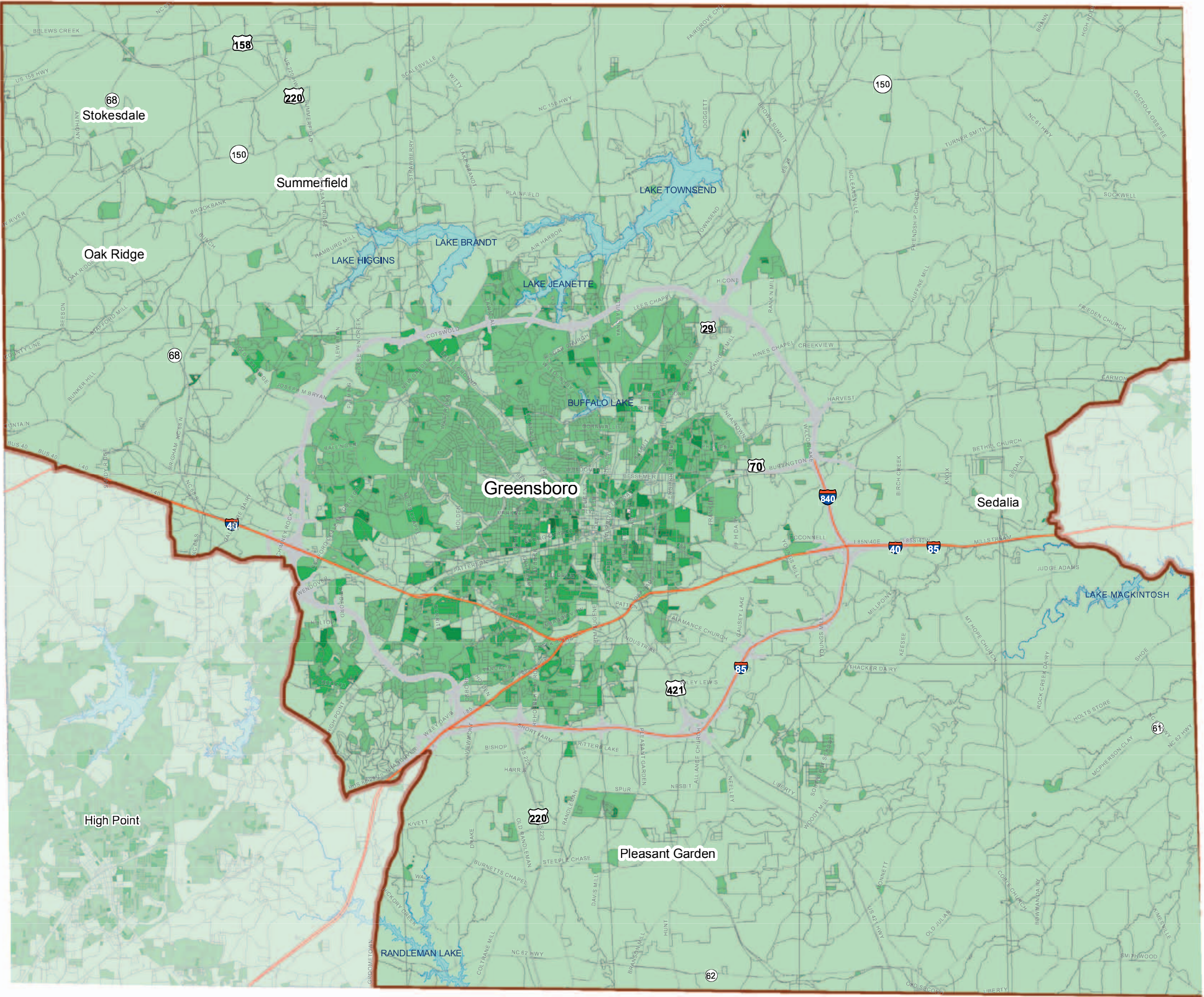
Major Roads

Greensboro MAB

Lakes



Data Source: City of Greensboro





GREENSBORO URBAN AREA

COMPREHENSIVE BICYCLE, PEDESTRIAN, AND GREENWAY PLAN

MAP 2.2

MEDIAN FAMILY INCOME

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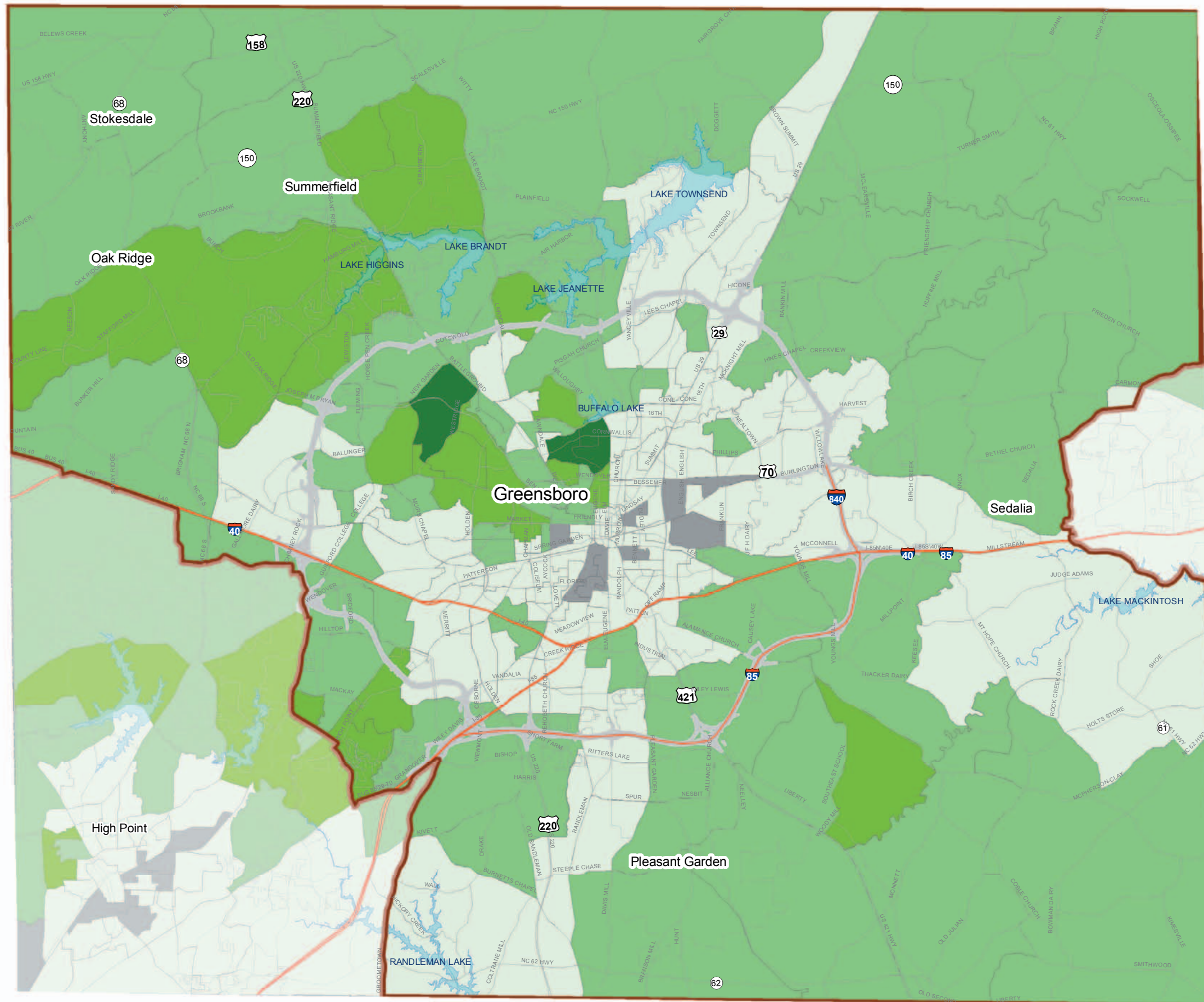
Median Income

- Under \$25,000
- \$25,000 - \$50,000
- \$50,000 - \$75,000
- \$75,000 - \$100,000
- Above \$100,000
- Interstates
- Urban Loop
- Major Roads
- Greensboro MAB
- Lakes

1
Miles



Data Source: City of Greensboro





are more conducive to non-motorized trips. Another reason land use matters is that it is a key determinant of the quality of the bicycling and walking environment: another significant determinant of when and where people will choose to walk and bicycle. This relates back to aesthetic appeal, sense of safety, ease of access, and sense of comfort.

The Greensboro area has some sections where land use and transportation infrastructure combine to create notably good areas for walking and cycling: these areas include downtown Greensboro, the UNC-G area, Lindley Park, and the new Willow Oaks redevelopment. Other areas with conducive land uses but with transportation infrastructure needs include the areas surrounding traditional rural main street developments like Pleasant Garden, Stokesdale, and Summerfield. The area also has a large share of low density, predominantly single-use residential areas feeding out onto major arterials. Such areas pose challenges, but can be somewhat improved thorough infrastructure retrofits and redevelopment opportunities.

The Connections 2025 Plan, and to varying extents the County and Town Plans, recognize the land-use and transportation relationship, and the importance of pursuing an integrated strategy of walkable, bikeable, mixed-use community development. The Bicycle, Pedestrian and Greenway Plan recommends that this remain a focus of future land use plans, and more importantly that it be made a key consideration in the ongoing land-use decision-making process of area local governments.

Current land use for the area can be seen in Map 2.3 (Current Land Use).

2.6 Trip Attractors

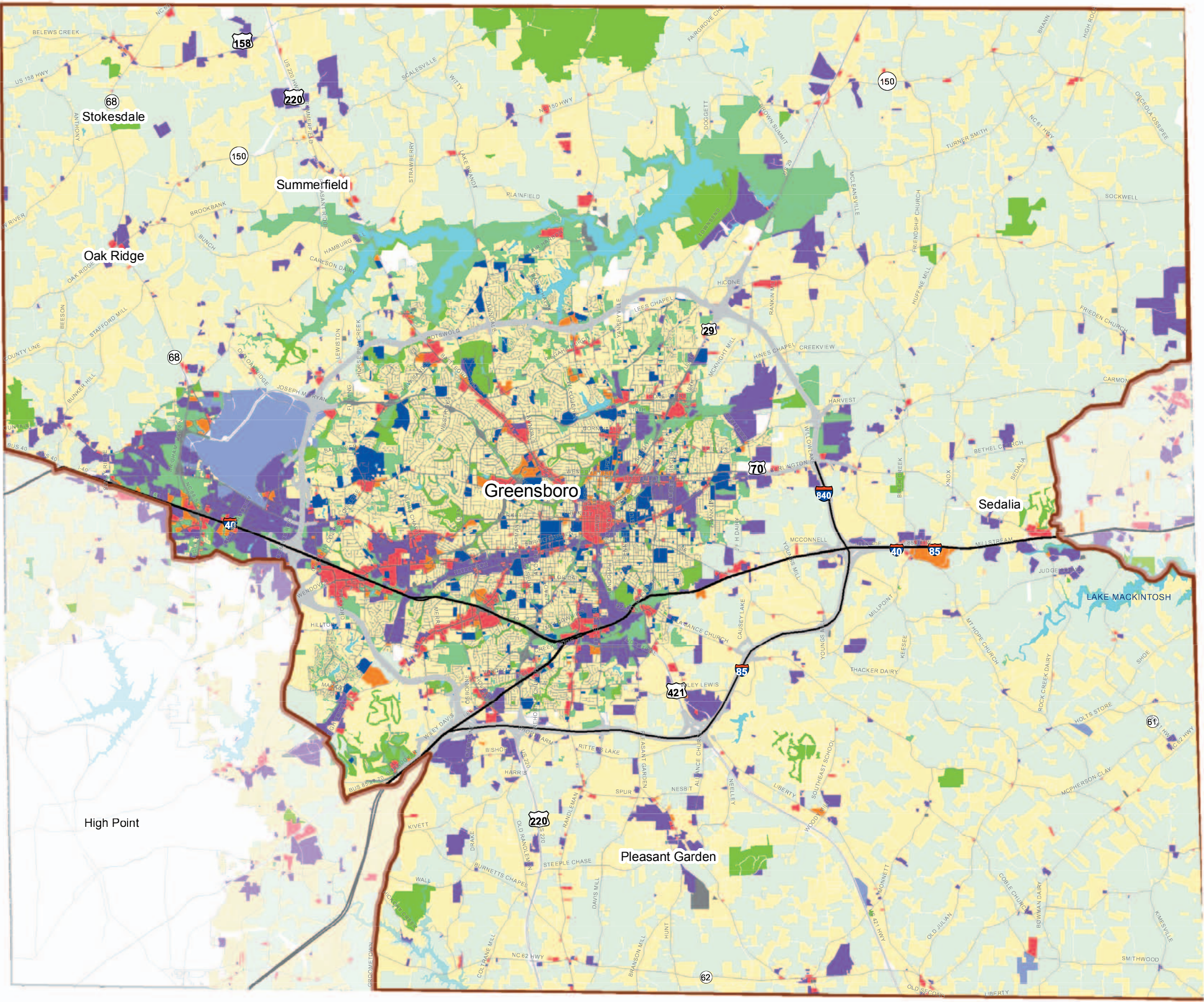
People currently drive, walk, or bicycle to a variety of destinations across the Metropolitan area for different activities. Each of these destination points is referred to in this document as a trip attractor. Trip attractors form the nodes to which people are traveling. These are essential to consider in order to connect the greenway, bicycle, and pedestrian network to key destinations. A map of trip attractors is displayed in Map 2.4 (Trip Attractors).



Figure 2(b). The Arboretum is a popular trip attractor with numerous walking paths.

Key categories of trip attractors in Greensboro include:

- *Housing, especially higher density housing*
- *Shopping*
- *Entertainment*
- *Public transportation*
- *Schools*
- *Colleges/Universities:*
 - Guilford College, NC A&T University, UNC-Greensboro, Bennett College, Greensboro College, Guilford Technical Community College*
- *Parks and Recreation Centers*



GREENSBORO URBAN AREA

COMPREHENSIVE BICYCLE, PEDESTRIAN, AND GREENWAY PLAN

MAP 2.3

CURRENT LAND USE

Legend

Agriculture

Airport

Commercial

Recreation

Industrial

Institutional

Residential

Open Space

Office

Utility/ROW

Water

Interstates

Urban Loop

Major Roads

Greensboro MAB

Data Source: City of Greensboro



GREENSBORO URBAN AREA

COMPREHENSIVE BICYCLE, PEDESTRIAN, AND GREENWAY PLAN

MAP 2.4

TRIP ATTRACTORS

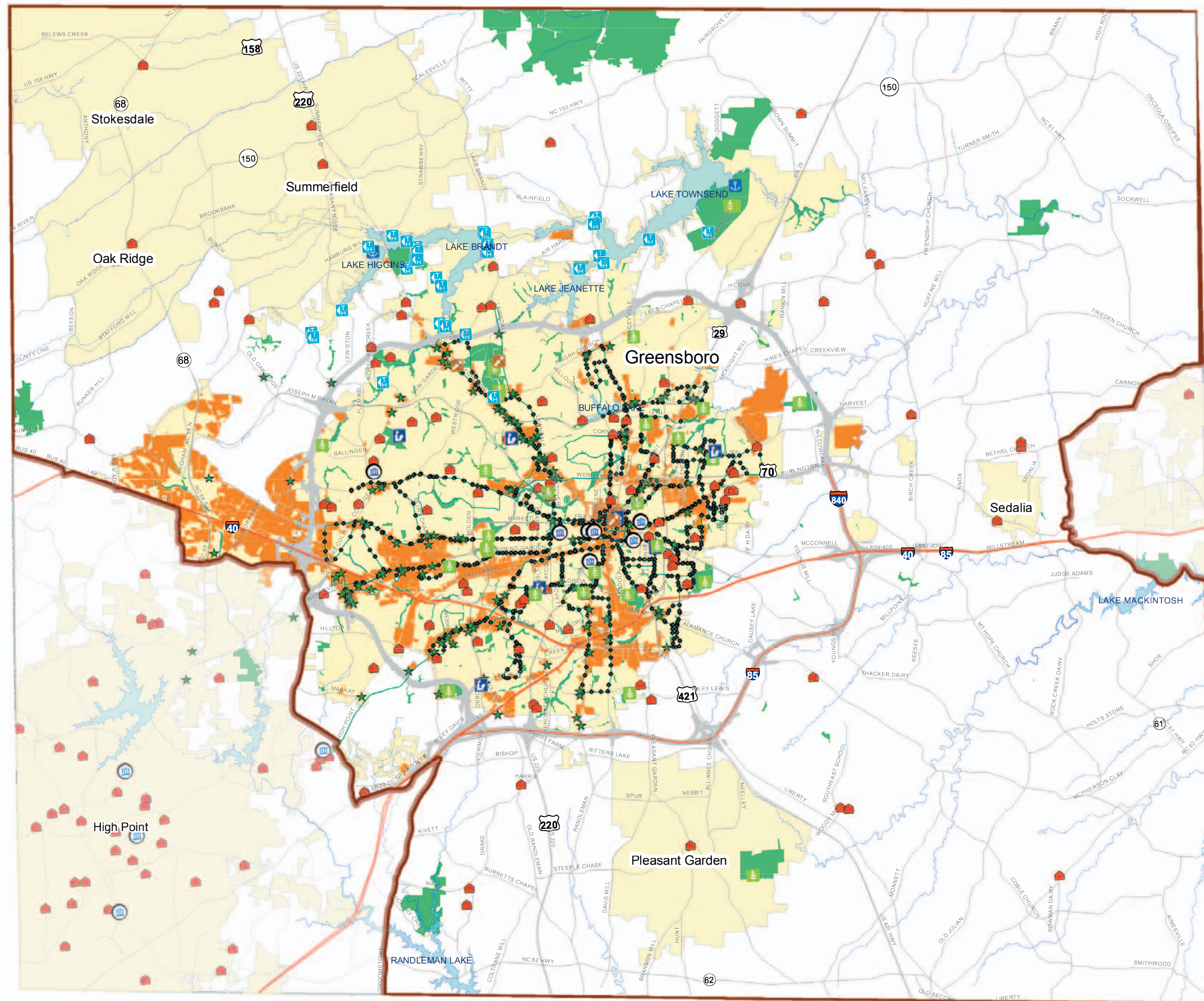
Legend

- Cultural Facility
- Library
- Marina
- Recreation Facility
- Trailhead/Parking
- College
- School
- Shopping
- GTA Bus Stop
- Bus Routes
- Interstates
- Urban Loop
- Major Roads
- Rivers
- Employment Area
- Parks
- Greensboro MAB
- Lakes

1
Miles



Data Source: City of Greensboro





- *Downtown*
- *Libraries*
- *Cultural/Historical Sites*
- *Places of Work*
- *Public Spaces*
- *Hospitals*
- *Retirement Centers and Nursing Homes*
- *Trailheads*



Figure 2(c). Downtown is a very popular trip attractor and will become even more popular with current urban revitalization efforts.

2.7 Transportation

Consistent with the United States overall, automobiles and trucks currently dominate the transportation system in the Greensboro area. Major roadway corridors carrying large amounts of traffic include I-40 and I-85, US 29, US 220, US 421, and NC 68. The Urban Loop is complete from US 70 south to I-40/I-85 and from I-40/I-85 near Mt. Hope Church Road to I-85 near Groometown Road. Construction is underway from I-85 near Groometown Road to Bryan Boulevard east of Piedmont Triad International Airport. The eventual construction on the remainder of the Urban Loop from Bryan Boulevard to US 70 will complete this 41-mile project. These facilities form the major arteries

of the area's roadway system. The roadway system also provides the bulk of the bicycle and pedestrian circulation system. Hence much of the discussion in this plan revolves around ways to retrofit and otherwise improve the roadway system as an environment supportive of walking and bicycling activity.

Major Roadway Barriers

The Greensboro Urban Area has many multi-lane roadways that serve high-volume, high-speed traffic (e.g., High Point Road, Randleman Road, Wendover Avenue, Summit Avenue, Aycock Street, etc.). While these roadways have been designed to move large volumes of traffic, they are generally difficult for pedestrians to cross. Most of these roads lack raised medians or median crossing islands, which reduce crossing distance and complexity for pedestrians. There are often multiple turning lanes at intersections, which require pedestrians to cross additional distance and negotiate complex traffic flows. Despite the challenges, these facilities are used, sometimes heavily, by pedestrians and bicyclists because they serve key destinations, including retail stores, restaurants, employment centers, churches, libraries, and government buildings. In addition, many of these roadways are also main arteries in the public transportation system and have substantial concentrations of higher density multi-family housing developments.

Unfriendly roadway environments are cited by many Greensboro area residents as a significant reason why they choose to avoid walking and bicycling along or across many of the major arterials. According to the online survey respondents, the second and third biggest factors that discourage walking (after a lack of sidewalks and trails) are pedestrian unfriendly streets and land uses (cited by 66% of respondents) and unsafe crossings (cited by 57% of respondents). In this regard, such corridors pose significant barriers to the bicycle,



pedestrian, and greenway networks throughout the region. And yet, corridors such as Randleman Road, High Point Road see heavy pedestrian use while many others including as Battleground, Lawndale, Market, and Friendly see significant use. Therefore, improving conditions for crossing these roadways, retrofitting with sidewalks, upgrading deficient sidewalks where needed, and promoting compatible land uses will serve two key needs: (1) encourage the choice to walk and bicycle and (2) better accommodate current levels of walking and bicycling activity.



Figure 2(d). High Point Rd. can be a barrier for pedestrian traffic.

Freeways and other major highways, including the Urban Loop and I-40/85, present significant barriers throughout Greensboro. Many bridges, underpasses, and culverts were not designed to allow pedestrian crossings, exacerbating the barriers that these facilities present to bicycle and pedestrian mobility. Enhancing these crossings and ensuring that future crossings are accessible should be key priorities for plan implementation. The pedestrian bridge recently constructed over US 29 north of Cone Boulevard (shown in background of Figure 2(i)) was constructed by NCDOT in response to a number of vehicle/pedestrian crashes that had occurred at this location

and is an example of the kind of retrofit project that can be necessary to serve transportation demand in the community.

2.7.1 Existing Trails and Greenways

A system of 81 miles of trails can be found in the Greensboro Urban area. The majority of this mileage can be found in the Watershed region at the northern end of Greensboro's city limits. Along with the Watershed trails, there are longer-distance greenways and park-contained trails. Existing off-road trails can be viewed in Map 2.5 (Existing Off-Road Trails).

Garden and Park Trails

The garden and park trails are loop-based trails that meander within the gardens and parks of Greensboro. These trails have a variety of surfaces to accommodate pedestrians, bicyclists, and even motorists. A few of these trails are special purpose trails such as the Free Ride Park Trail (off-road bike) in Country Park and the Charlotte Hawkins Brown Trail (educational) in Sedalia.

Because the garden and park trails are loop-based trails, they serve as a destination rather than a transportation corridor. Each of these trails is contained within a public greenspace, a city garden or park. The public greenspaces within the City of Greensboro are spread out and not interconnected with each other. Therefore, connections between each of these loop-based trails are lacking throughout the city.



Figure 2(e). Trail within Bog Garden.



GREENSBORO URBAN AREA

COMPREHENSIVE BICYCLE, PEDESTRIAN, AND GREENWAY PLAN

MAP 2.5

EXISTING OFF-ROAD TRAILS

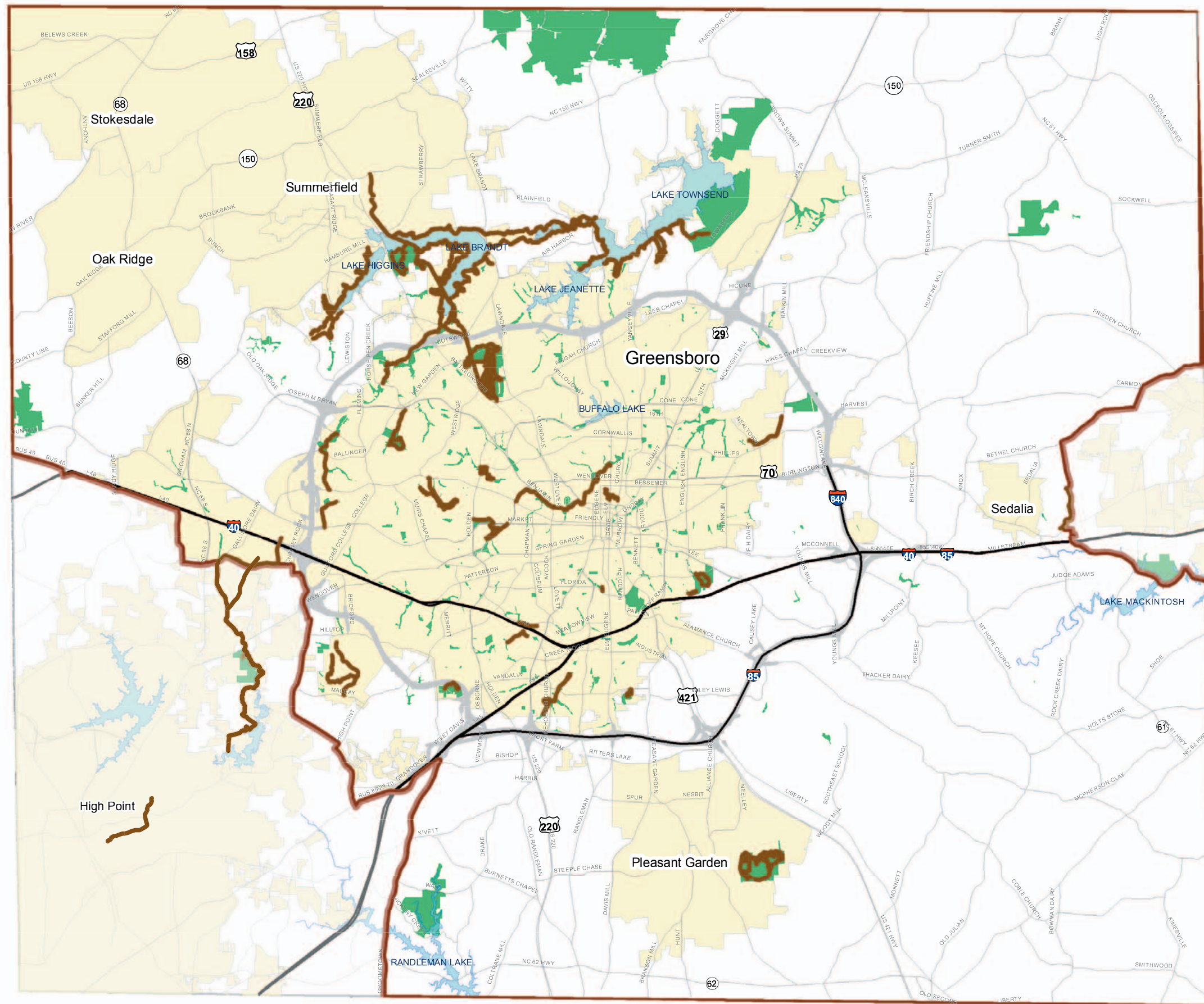
Legend

- Existing Off-Road Trails
- Interstate
- Urban Loop
- Major Roads
- Parks
- Greensboro MAB
- Lakes

1
Miles



Data Source: City of Greensboro





Greenways

The greenways in Greensboro offer linear connections to a variety of destinations and trip attractors. These trails can be used as a transportation corridor as well as for recreational purposes. The completed portions of the greenway trails are paved to facilitate uses for pedestrians and bicyclists. These greenways include the Latham Park Greenway, Lake Daniel Greenway, Lake Brandt Greenway, and Bicentennial Greenway.

The majority of the multi-use greenway mileage is contained north and west of Downtown, leaving areas to the east and south underserved in terms of off-road facilities.

Because these greenway corridors offer a long linear trail opportunity across the city, construction of some trail portions, especially the Bicentennial Greenway, are not yet complete. In other cases, in order to maintain connectivity, these greenways contain portions of on-road sidewalks.

Watershed Trails

Greensboro's watershed trails system is located in the northern part of Guilford County along Lake Higgins, Lake Brandt, and Lake Townsend. This inter-connected system provides thirteen natural surface trails, which offer recreational opportunities for hikers. A few of the trails are multi-use to accommodate bikers as well as hikers. Each trail follows a linear corridor along the municipal lakes connecting the marinas, parks, and greenway trails of the watershed region. The watershed trails offer a variety of trip lengths, mostly longer distances, that allow trail users to loop around the lakes on different trails or hike out and back on the same trail. A map of the watershed region has been developed by the Parks and Recreation Department, describing each trail, offering general information about the watershed, and outlining the rules and hours of operation.



Figure 2(f). Trailhead to the Nat Greene Trail.

The watershed trails are more of a recreational destination than a transportation corridor. Because parking at trailheads is necessary to access the watershed trails, primitive parking areas do exist at the most popular trailheads. However, parking facilities are inadequate overall. The Bicentennial and Lake Brandt Greenways offer the only off-road connection to the watershed trail system from the downtown area for hikers and bikers. These two greenway trails are well integrated into the watershed trail system, although linkages between the watershed trails themselves are not as strong. Major roadways create a barrier between the watershed trails, as they offer no formal roadway crossing such as signage, pavement markings, or signals for trail users to continue on. Motorists are often unaware that the trails terminate at the roadways. The existing signs at each trailhead are the only indication that a trail exists. Motorists traveling the speed limit are unable to see signs denoting a trail while driving on the roadway.

2.7.2 Ongoing Greenway Efforts

In 2000, Greensboro citizens approved bond funding of \$34.2 million for renovations and improvements to



recreational facilities. Strong support from the public enabled this funding. Part of the \$34.2 million was designated for Connector Route greenways which would help fill gaps in the greenway network. Planning and coordination between the Greensboro Department of Transportation (GDOT) and the City of Greensboro Trails Division helped to develop connector route recommendations that are further supported and recommended in this Plan. Some exist already while the remaining connector routes were incorporated into the recommendations of this Plan and are included in the higher priorities for completion.

Other important, specific greenway efforts are at different stages of planning and development throughout the Greensboro Urban Area and are also included in this Plan's recommendations but are highlighted with distinctive symbology on the Greenway Recommendations map. They represent ongoing efforts to develop quality, lengthy, and regionally important greenways with which the City of Greensboro should stay involved and continue to pursue in the coming years. Highlights are described on the following pages.

Battleground Rail Trail

The proposed Battleground Rail Trail will utilize an abandoned rail corridor that parallels Battleground Avenue. This new greenway corridor is a vital link between the Lake Brandt Greenway, the Bicentennial Trail, the Watershed Trail System and Downtown Greensboro. Phase One of the Battleground Trail extends south from Pisgah Church Road to Markland Drive and Phase Two will extend the trail from Markland Drive to Downtown Greensboro. Phase One of the Rail Trail is currently in its final design phase. Phase One construction will begin following property acquisition, which is scheduled to be completed by fall of 2007. The completed Battleground Rail Trail will eventually establish a continuous trail corridor from the proposed

Greensboro Downtown Greenway Loop to the Lake Brandt Greenway.

Greensboro Downtown Loop Greenway

The Greensboro Downtown Greenway is a proposed four-mile loop around the central core of downtown. This urban greenway would link to the proposed Battleground Rail Trail, ultimately connecting to the Lake Brandt Greenway and Watershed Trails. It would provide a unique multi-use trail that loops around downtown, linking public space, parks, recreation facilities, neighborhoods and commercial centers. The proposed greenway is currently in its preliminary design phase and planning is being funded by a grant from the Moses Cone – Wesley Long Community Health Foundation. It remains to be seen, however, how much more technical design work will be required before the routing of the downtown loop portion of this proposed facility is determined.

Mountains to Sea Trail

The Mountains to Sea Trail (MST) is a regional trail corridor, currently consisting of over 900 miles of trails, greenways, roads, and signed bicycle routes. The long term goal for the MST is to create a continuous path from Clingman's Dome, in the mountains of North Carolina, to Jockey's Ridge at the Atlantic Ocean. Currently the MST corridor skims the northern edge of the Greensboro Metro Area, utilizing the established trail systems along Lake Brandt and Lake Townsend. The remaining MST corridor in Guilford County utilizes road corridors and signed bicycle routes. Current efforts in Guilford County center on acquiring and establishing off-road connections to existing segments of the MST in the area.

Piedmont Greenway

The Piedmont Greenway is planned as a 19-mile multi-use trail and 9-mile network of spur trails that will connect Greensboro to Kernersville, Triad Park and



Winston-Salem. A Master Plan for the greenway was completed in January of 2003, identifying the desired trail corridor and developing a property acquisition strategy for each parcel along the route. Approximately 57% of the Piedmont Greenway is located in Guilford County. Currently the Piedmont Land Conservancy is working with local residents to acquire funding for land or easements to make the Piedmont Greenway a reality.

Bicentennial Greenway

The Bicentennial Greenway is a planned 16-mile multi-use trail located in western Guilford County. The trail is a joint project between Guilford County, the City of High Point, and the City of Greensboro. To date, High Point and Greensboro have each constructed sections of the Bicentennial Greenway in their respective municipalities, however the link between the existing sections is still under development. The completed Bicentennial Greenway will connect to the Lake Brandt Greenway and Battleground Trail in Greensboro, creating a continuous link between High Point and Downtown Greensboro. The proposed corridor will take trail users through the historic Guilford Courthouse National Military Park and along other scenic corridors.



Figure 2(g). Southern portion of the Bicentennial Greenway near Gibson Park.

2.7.3 Existing Roadway Conditions for Pedestrian and Bicycle Transportation

The Greensboro area roadway system serves a variety of users, including cars and trucks, bicyclists, pedestrians, and public transportation. While the system of roadways provides connections to most destinations in the metropolitan area, the conditions on some of these roadways do not accommodate pedestrians and bicyclists adequately. While many neighborhood streets and rural roadways have low enough traffic volumes to accommodate pedestrians and bicyclists without any special non-motorized facilities, there are many busier roadways that lack facilities to make travel safe and convenient for pedestrians and bicyclists. Even with these challenges, a majority of the pedestrian and bicycle trips in the Greensboro area take place on and around the roadway network. Therefore, the recommendations of this Plan are intended to preserve the good pedestrian and bicycle facilities that exist in certain roadway corridors while enhancing and creating pedestrian and bicycle accommodations in roadway environments where non-motorized travel is currently a challenge. These improvements will result in roadways that will serve the needs of all roadway users, including motorists, bicyclists, pedestrians, and public transportation riders.

The existing conditions described below are based on field work and data analysis completed in Spring 2006.

Pedestrian and Bicycle Facilities

Pedestrian facilities in the Greensboro Urban Area, primarily in the City of Greensboro, include sidewalks, curb ramps, marked crosswalks, grade-separated crossings, median crossing islands, pedestrian signals, and bus shelters, benches, and signs. There are approximately 370 miles of sidewalks in the City of Greensboro (for comparison, there are approximately 1,360 non-interstate roadway centerline miles in the



City). Of these sidewalks, most are at least five feet wide (76%). Nearly all of the sidewalks are at least four feet wide (98%). Most of these sidewalks are also separated by a buffer (often grass) from the roadway (77%).

allows pedestrians and bicyclists to cross the freeway safely without needing to travel one-half mile south to the nearest alternative crossing location or risking injuries or death while attempting to cross US 29 at grade.



Figure 2(h). Good sidewalk facility on E. Market Street.

Other pedestrian crossing facilities tend to be concentrated in the Downtown Greensboro area and around the college campuses. Curb extensions have been used on Elm Street and Greene Street; median crossing islands are found on Church Street and Eugene Street. Pedestrian signals have been provided at most signalized intersections in the central business district and at several major intersections in other parts of the City and surrounding communities. New countdown pedestrian signal heads have been installed in several locations, most being in Downtown Greensboro. However, outside of Downtown Greensboro, there are many intersections on arterial roadways without pedestrian signal heads. These locations are often near commercial areas and bus stops with significant pedestrian activity. Current practice to install countdown signals with new traffic signals and to add pedestrian crossing signals on a priority basis will help to provide these facilities throughout the City over time.

Most of the existing sidewalk network is concentrated in the historic sections of Greensboro. In contrast, most parts of the City developed between the 1940's and the year 2000 generally did not include sidewalks. However, the City is in the process of aggressively retrofitting roadways with sidewalks. These efforts have included new sidewalk construction on corridors throughout the city, including East and West Market Streets, Friendly Avenue, Lawndale Drive, Wendover Avenue, Cone Boulevard, Holden Road, Freeman Mill Road and Florida Street.

Shelters and benches have been provided at many of the busier bus stops in the GTA transit system. However, most bus stops are still marked with only a sign. At these locations, pedestrians often stand in dirt or grass, lean on trees, or sit on curbs waiting for the bus. There are several bus stop locations with shelters, benches, and signs, but without sidewalks for pedestrian access. GTA's ongoing efforts to upgrade passenger amenities across the system will improve this situation over time.

Marked crosswalks are present at most controlled intersections throughout Greensboro. While some crosswalks are fading, the majority are in good condition. Several intersections do not have crosswalks marked across all legs of the intersection. Curb ramps are also provided for a majority of crosswalks.

An overpass has been provided across US 29 north of Cone Boulevard at McKnight Mill Road. This overpass

Note that the Greensboro Urban Area has many lower-speed neighborhood streets and low-volume



rural roadways that currently accommodate most pedestrians without difficulty. However, many of these streets do not have sidewalks, which can make them difficult to travel along for people with disabilities.



Figure 2(i). GTA shelter without sidewalk at McKnight Mill Rd.

The existing bicycle facilities in the Greensboro Urban Area are bicycle lanes and signed bicycle routes. At the time of this writing, projects were underway to extend the bicycle lanes on Spring Garden Street and stripe new bicycle lanes on Florida Street. The City of Greensboro currently has eight signed bicycle routes. These routes tend to use lower-volume neighborhood streets. They are also generally organized into loops, which may help guide bicyclists on recreational rides between parks in the City. However, they are not organized to serve commuting routes or to provide the best bicycle connections between major destinations in the City, such as Downtown Greensboro, colleges and universities, and shopping areas.

Paved shoulders and greenway trails are shared facilities that serve both pedestrians and bicyclists. The existing greenway trail system was discussed earlier in this chapter. An 870-mile inventory of the main roadways in the Greensboro Urban Area found

that there are 29 miles of roadways with paved shoulders (minimum of three feet wide)³. Additional information about the suitability of roadways for bicycling is provided in the Bicycle Level of Service section in the following chapter.

Several other facilities and programs in the Greensboro Urban Area also support bicycling, including bicycle racks on buses and bicycle parking. The GTA has installed front-mounted bicycle racks on all of its buses. These racks have capacity for two bicycles. Bicycle racks have been provided on the UNC-Greensboro campus, at the J. Douglas Galyon Depot (GTA Transfer Center), in several City of Greensboro parks, and in Downtown Greensboro. As discussed in the program and policy recommendations chapter, it is recommended that the City continue and expand its bicycle rack installation program at strategic locations, as well as to identify ways to encourage, and as appropriate, require bicycle rack installation in the development process.

Existing bicycle and pedestrian facilities can be seen in Map 2.6 (Existing Bicycle and Pedestrian Facilities).

2.8 Summary

An examination of existing conditions establishes a background for developing the recommendations of this Plan. This chapter examined a significant number of factors that impact the overall pedestrian and bicycling environment. A history of walkability, bikeability, and greenways provides the perspective for future recommendations. A review of community plans summarizes the existing planning efforts and support for developing this Plan. A comprehensive examination of population, land use, trip attractors, and existing bicycle, pedestrian, and greenway facility characteristics provides a snapshot of on-the-ground conditions, needs, and gaps in current bicycle, pedestrian, and greenway facilities. This analysis of



GREENSBORO URBAN AREA

COMPREHENSIVE BICYCLE, PEDESTRIAN, AND GREENWAY PLAN

MAP 2.6

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Legend

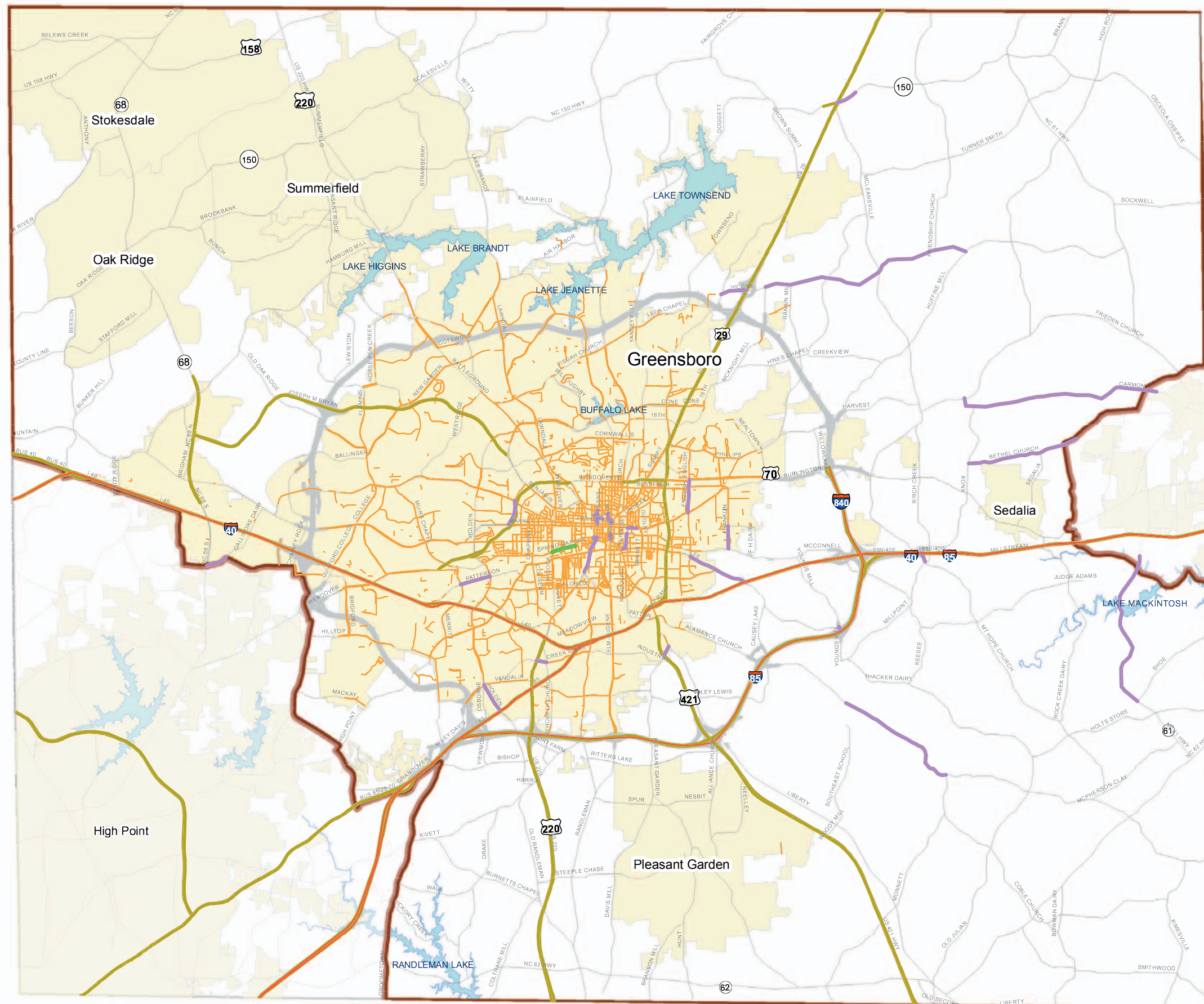
- Bicycle Lane - Existing
- 3' Shoulder (Striped/Paved/No Parking)
- Sidewalks
- Bicyclists/Pedestrians Not Allowed
- Interstates
- Urban Loop
- Major Roads
- Greensboro MAB
- Lakes

Roads that do not allow pedestrian or bicycle traffic are Bryan Boulevard, Wendover Avenue from US 29 to Church Street and from Hill Street to Clifton Road, and all other freeways including US 29, I-40, I-85, the Urban Loop, US 421 south of Alamance Church Road, and NC 68 from Pleasant Ridge to I-40.

1
Miles



Data Source: City of Greensboro





existing conditions begins to substantiate the need for alternative transportation and recreation improvements for the overall Greensboro Urban Area and provides an efficient transition into the following Needs Assessment Chapter.

(Endnotes)

¹Data from US Census, Triad & Piedmont Triad Regional Travel Demand Model, N.C. ESC

²United States Department of Transportation, Bureau of Transportation Statistics. National Household Travel Survey, 2001.

³ The inventory included collector and arterial roadways, as well as selected neighborhood streets. It did not include limited-access highways or most neighborhood streets.